REMARKS/ARGUMENTS

Claims 1-2, 4, and 7-24 are pending in the application. Claim 12 is amended herein. The Applicant hereby requests further examination and reconsideration of the application in view of the foregoing amendments and these remarks.

Drawings

In paragraph 3 of the office action, the Examiner stated that Figs. 1-4 "should be designated by a legend such as –Prior Art– or –Related Art–." In response, the Applicant submits herewith a Transmittal of Corrected Drawing(s) amending Figs. 1-4 as suggested by the Examiner.

Claim Objections

In paragraph 4, the Examiner objected to claim 12. In response, the Applicant has amended claim 12 as suggested by the Examiner. This amendment was not made to overcome any prior-art rejections.

Double Patenting

In paragraph 7, the Examiner provisionally rejected claims 1-2, 4, 7-9, 11-13, and 17 on the ground of nonstatutory double patenting over claims of copending Application No. 10/607,924. The Applicant is willing to file an appropriate terminal disclaimer if and when this rejection ceases to be provisional.

Claim Rejections under 35 U.S.C. 102 and Allowable Subject Matter

In paragraph 9, the Examiner rejected claims 1-2, 7-10, 13, 16, 20-21, and 23-24 under 35 U.S.C. 102(b) as being anticipated by Blauvelt. In paragraph 10, the Examiner indicated that claims 4, 11-12, 14-15, 17-19, and 22 were directed to allowable subject matter. For the following reasons, the Applicant submits that all of the pending claims are allowable over Blauvelt.

Claim 1

According to claim 1, a first frequency-dependent pre-distortion signal is generated corresponding to a first set of frequency components for the input signal, a second frequency-dependent pre-distortion signal is generated corresponding to a second set of frequency components for the input signal, wherein the first set of frequency components is different from the second set of frequency components, and the first and second frequency-dependent pre-distortion signals are combined to generate the pre-distorted signal. The first set of frequency components corresponds to positive frequency components of the input signal, while the second set of frequency components corresponds to negative frequency components of the input signal. The Applicant submits that Blauvelt does not teach or even suggest such a combination of features.

In rejecting claim 1 based on Blauvelt, the Examiner argued that:

- o A first signal processing path consisting of element 52 in Fig. 6 of Blauvelt generates a main non-baseband pre-distortion signal;

- o A second signal processing path consisting of elements 59-73 in Fig. 6 of Blauvelt generates a first frequency-dependent pre-distortion signal corresponding to a first set of frequency components;

- o A third signal processing path consisting of elements 82-91 in Fig. 6 of Blauvelt generates a second frequency-dependent pre-distortion signal corresponding to a second set of frequency components different from the second set of frequency components;

- o Couplers 58 and 53 in Fig. 6 of Blauvelt perform an example of the combining of claim 1; and

- o Switch-able RF inverters 65 and 89 in Fig. 6 of Blauvelt correspond to positive or negative frequency components of the RF input signal.

The Applicant submits that the Examiner mischaracterized the teachings in Blauvelt in rejecting claim 1.

First of all, while Blauvelt does teach two different frequency-dependent pre-distortion signals (e.g., generated by the second and third signal processing paths in Fig. 6), Blauvelt does not teach that those two different frequency-dependent pre-distortion signals correspond to two different sets of frequency components.

In Blauvelt's second signal processing path of Fig. 6, the magnitude of the pre-distortion signal is made frequency-dependent by amplitude tilt 76. See, e.g., column 4, lines 9-25; column 6, lines 26-29 and lines 65-67; and column 8, lines 37-63. Similarly, in Blauvelt's third signal processing path of Fig. 6, the magnitude of the pre-distortion signal is made frequency-dependent by amplitude tilt 88. See column 9, lines 22-24. Significantly, however, all of the frequency components in the RF input signal contribute to the pre-distortion in each of these two paths. In Blauvelt, the RF input signal is not separated into two different sets of frequency components, where each different set of frequency components is used to generate a different pre-distortion signal. In other words, Blauvelt does not teach a first set of frequency components processed in one signal processing path and a second, different set of frequency components processed in another signal processing path. Rather, in Blauvelt, all of the frequency components in the RF input signal are applied to the second signal processing path of Fig. 6 and contribute to the pre-distortion signal generated by that path. Similarly, all of the frequency components in the RF input signal are applied to the third signal processing path of Fig. 6 and contribute to the pre-distortion signal generated by that path.

Furthermore, the Examiner's statement that switch-able RF inverters 65 and 89 correspond to positive or negative frequency components constitutes a further mischaracterization of the teachings in Blauvelt. Blauvelt's switch-able inverters 65 and 89 are capable of inverting the amplitude of the applied signal, not the frequency of the applied signal. Blauvelt's switch-able inverters 65 and 89 have nothing to do with positive or negative frequency components for the RF input signal.

For all these reasons, the Applicant submits that claim 1 is allowable over Blauvelt. Since claims 2, 4, and 7-8 depend variously from claim 1, it is further submitted that those claims are also allowable over Blauvelt.

Claim 7

According to claim 7, a frequency-independent pre-distorted signal is generated from the input signal, wherein the frequency-independent pre-distorted signal and the first and second frequency-

dependent pre-distortion signals are combined to generate the pre-distorted signal. The Examiner cited the first signal processing path consisting of element 52 in Fig. 6 of Blauvelt as generating an example of the frequency-independent pre-distorted signal of claim 7. The Applicant submits that the Examiner again mischaracterized the teachings in Blauvelt in rejecting claim 7.

Blauvelt's first signal processing path does not generate a distorted signal at all, let alone a frequency-independent pre-distorted signal. Element 52 is a delay element that simply delays the original RF input signal to compensate for the signal processing delays of the other two paths to ensure synchronization at coupler 53. See, e.g., column 7, lines 23-26. Delay 52 does not generate any pre-distortion. Other than shifting the RF input signal in time, the RF signal remains unchanged.

The Applicant submits that this provides additional reasons for the allowability of claim 7 over Blauvelt.

Claim 9

According to claim 9, (a) a first signal processing path generates a main pre-distortion signal from the input signal, (b) a second signal processing path generates a first frequency-dependent pre-distortion signal corresponding to a first set of frequency components for the input signal, (c) a third signal processing path generates a second frequency-dependent pre-distortion signal corresponding to a second set of frequency components for the input signal, wherein the first set of frequency components is different from the second set of frequency components, and (d) a combiner combines the first and second frequency-dependent pre-distortion signals with the main pre-distortion signal to generate the pre-distorted signal. The Applicant submits that Blauvelt does not teach or even suggest such a combination of features.

First of all, as described above with regard to claim 7, the first signal processing path consisting of element 52 in Fig. 6 of Blauvelt does not generate an example of the main non-baseband pre-distortion signal of claim 1. Element 52 is a delay that simply delays the original RF input signal to compensate for the signal processing delays of the other two paths to ensure synchronization at coupler 53. See, e.g., column 7, lines 23-26. Delay 52 does not generate any pre-distortion. Other than shifting the RF input signal in time, the RF signal remains unchanged.

Furthermore, as described above with regard to claim 1, while Blauvelt does teach two different frequency-dependent pre-distortion signals (e.g., generated by the second and third signal processing paths in Fig. 6), Blauvelt does not teach that those two different frequency-dependent pre-distortion signals correspond to two different sets of frequency components.

For all these reasons, the Applicant submits that claim 9 is allowable over Blauvelt. Since claims 10-19 depend variously from claim 9, it is further submitted that those claims are also allowable over Blauvelt.

Claim 10

According to claim 10, the first set of frequency components corresponds to positive frequency components of the input signal, and the second set of frequency components corresponds to negative frequency components of the input signal. As described above with regard to claim 1, the Applicant submits that the Examiner's statement that switch-able RF inverters 65 and 89 correspond to positive or negative frequency components constitutes a mischaracterization of the teachings in Blauvelt. Blauvelt's switch-able inverters 65 and 89 are capable of inverting the amplitude of the applied signal, not the

frequency of the applied signal. Blauvelt's switch-able inverters 65 and 89 have nothing to do with positive or negative frequency components for the RF input signal. The Applicant submits that this provides additional reasons for the allowability of claim 10 over Blauvelt.

Claim 13

According to claim 13, the first set of frequency components corresponds to positive and negative frequency components of the input signal, and the second set of frequency components corresponds to only positive frequency components or only negative frequency components of the input signal. While it is true that Blauvelt teaches a signal processing path that generates frequency-dependent pre-distortion signal corresponding to positive and negative frequency components of an input signal (e.g., each of Blauvelt's second and third signal processing paths), Blauvelt does not teach or even suggest a signal processing path that generates frequency-dependent pre-distortion signal corresponding to only positive frequency components or only negative frequency components of an input signal.

As described above with regard to claim 1, in Blauvelt, all of the frequency components (i.e., both negative and positive frequency components) in the RF input signal are applied to the second signal processing path of Fig. 6 and contribute to the pre-distortion signal generated by that path. Similarly, all of the frequency components in the RF input signal are applied to the third signal processing path of Fig. 6 and contribute to the pre-distortion signal generated by that path.

The Applicant submits that this provides additional reasons for the allowability of claim 13 over Blauvelt.

Claim 20

According to claim 20, a first frequency-dependent pre-distortion signal is generated corresponding to a first set of frequency components for the input signal, a second frequency-dependent pre-distortion signal is generated corresponding to a second set of frequency components for the input signal, wherein the first set of frequency components is different from the second set of frequency components, and the first and second frequency-dependent pre-distortion signals are combined to generate the pre-distorted signal. The first set of frequency components corresponds to positive and negative frequency components of the input signal, and the second set of frequency components corresponds to only positive frequency components or only negative frequency components of the input signal. The Applicant submits that Blauvelt does not teach or even suggest such a combination of features.

As described above with regard to claim 1, while Blauvelt does teach two different frequency-dependent pre-distortion signals (e.g., generated by the second and third signal processing paths in Fig. 6), Blauvelt does not teach that those two different frequency-dependent pre-distortion signals correspond to two different sets of frequency components.

Furthermore, as described above with regard to claim 13, while it is true that Blauvelt teaches a signal processing path that generates frequency-dependent pre-distortion signal corresponding to positive and negative frequency components of an input signal (e.g., each of Blauvelt's second and third signal processing paths), Blauvelt does not teach or even suggest a signal processing path that generates frequency-dependent pre-distortion signal corresponding to only positive frequency components or only negative frequency components of an input signal.

As described above with regard to claim 1, in Blauvelt, all of the frequency components (i.e., both negative and positive frequency components) in the RF input signal are applied to the second signal processing path of Fig. 6 and contribute to the pre-distortion signal generated by that path. Similarly, all of the frequency components in the RF input signal are applied to the third signal processing path of Fig. 6 and contribute to the pre-distortion signal generated by that path.

For all these reasons, the Applicant submits that claim 20 is allowable over Blauvelt. Since claims 21-24 depend variously from claim 20, it is further submitted that those claims are also allowable over Blauvelt.

Claim 23

According to claim 23, a frequency-independent pre-distorted signal is generated from the input signal, wherein the frequency-independent pre-distorted signal and the first and second frequency-dependent pre-distortion signals are combined to generate the pre-distorted signal. The Examiner cited the first signal processing path consisting of element 52 in Fig. 6 of Blauvelt as generating an example of the frequency-independent pre-distorted signal of claim 23. The Applicant submits that the Examiner again mischaracterized the teachings in Blauvelt in rejecting claim 23.

As described above with regard to claim 7, Blauvelt's first signal processing path does not generate a distorted signal at all, let alone a frequency-independent pre-distorted signal. Element 52 is a delay that simply delays the original RF input signal to compensate for the signal processing delays of the other two paths to ensure synchronization at coupler 53. See, e.g., column 7, lines 23-26. Delay 52 does not generate any pre-distortion. Other than shifting the RF input signal in time, the RF signal remains unchanged.

The Applicant submits that this provides additional reasons for the allowability of claim 23 over Blauvelt.

In view of the foregoing, the Applicant submits that the rejections of claims under 35 U.S.C. 102(b) have been overcome.

In the event that the Examiner believes that this amendment does not place the application in condition for allowance, the Applicant requests a telephonic interview between the Examiner and the Applicant's attorney Steve Mendelsohn and possibly with inventor George Vella-Coleiro to discuss this amendment. The Applicant requests that the Examiner call Mr. Mendelsohn (215-557-6657) to arrange a convenient time for such an interview.

In view of the above amendments and remarks, the Applicant believes that the now-pending claims are in condition for allowance. Therefore, the Applicant believes that the entire application is now in condition for allowance, and early and favorable action is respectfully solicited.

Respectfully submitted,

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